

In the Specification:

After page 1, line 25, insert the following title:

DESCRIPTION OF PREFERRED EMBODIMENTS

After page 16, line 17, insert the following paragraphs:

The described embodiments of the method and system use on-the-fly content transformation of all types of web pages, by rapid streaming technology, for optimal display on a screen of a wireless computing device. The transformation uses software modules to convert among several popular document markup languages and to reduce the file size of common web image formats, thus allowing the user to use one browser regardless of the original markup language or data format. The browser can then read a full range of Internet content, including data in various markup languages, images, and offline channels. The rapid streaming technology uses progressive rendering by the browser.

The method and system provide on-demand distillation of encodings such as GIF, JPEG, PPM, Postscript, HTML, PDF, and Plain Text. The distiller pipelines documents, so that the second page is distilled while the user views the first page. Programming building blocks, or workers, specialize in particular tasks such as scaling and dithering images in a particular format, converting between specific data formats, and extracting “landmark” information from specific web pages.

The method and system use compression to deliver electronic data to a wireless device. Software modules reduce the file size of common web image formats by, for instance, reducing the bit depth of an image to optimize transmission speed and optimize the display of the image. The datatype-specific lossy compression does not destroy the semantic content of an object or render an image unrecognizable to a user. Distillation reduces the required bandwidth and end-to-end latency; for instance, average size shrinks by a factor of five when going from compressed PostScript to gzipped HTML.

By using formats like the Wireless Markup Language (WML), rather than providing the original HTML data, wireless devices display bare-essential data.

Discarded data may include color information, high-frequency components, and pixel resolution of images, and formatting information but not the actual prose of formatted text. The goal is to preserve information that has the highest semantic value. The aggressiveness of distillation can track any significant changes in network bandwidth.

The method and system use trans-coding to deliver electronic data to a wireless device, converting to and from HTML, HDML, WML, PQA, and XHTML.

The method and system use reformatting to deliver electronic data to a wireless device. Distillation delivers data in an easy-to-parse format, resulting in better looking documents on clients with lower quality displays. For example, the distiller can replace PostScript formatting information with a custom rich-text format that preserves the position information of the words and is easier to read because the rich-text format uses the wireless device's screen fonts. The distiller addresses variation in clients by using datatype-specific compression, making intelligent decisions about what information to throw away based on the semantic type of the data. If the document is not in a format that the browser is capable of displaying, the document is transformed into an acceptable format. For example, if the browser only supports WML, the document is run through an HTML-to-WML translation module.

The method and system use programming building blocks to tailor output according to a user's preferences, needs, or device characteristics. Dynamic construction and configuration of document transformation streams are based on user-agent profiles provided by the user-agent or retrieved from a server based on information that the user-agent provided. The profiles specify supported content-types, display characteristics of the wireless device, and transformation preferences, allowing optimized displays for user-agents whose capabilities are not known at the time the information server is deployed.

The method and system provide personalized, time- and location-sensitive data to wireless devices by using formats like the Wireless Markup Language (WML), rather than providing cached Web clips or the original HTML data. Delivery of information from proprietary web-based sources to a wireless device is real-time and relevant to a user's location. For instance, the ePocrates application delivers medical information to physician users at the point of care. Information is automatically updated. For instance, an ePocrates user can get automatically updated drug information via the Internet from a drug database.

The method and system serve as a platform for custom wireless PDA applications, ranging from custom applications in fields such as sales force automation, facilities management, delivery tracking and logging, fleet management, construction management, practice management, group scheduling, yellow page directories, and electronic banking. For example, the method and system delivers medical information for ePocrates Inc., a healthcare application program for PDAs, which had 60,000 physician users in May 2000. Application-level adaptation provides meaningful data for a range of Internet clients of varying capabilities. Customized versions of a wireless device browser receive custom information from proprietary web-based sources in real time. For instance, the ePocrates application provides physician users with medical information from proprietary sources like the web-based New England Journal of Medicine. The method and system uses programming building blocks, or workers, that specialize in particular tasks. Applications can be built by composing workers, chaining them, or having them call other workers as a subroutine or coroutine.